AN EVALUATIVE STUDY OF MIDWIFE LED EDUCATIONAL INTERVENTION ON ANTENATAL EXERCISES AND DIET COUNSELLING DEVELOPED FOR PRIMI MOTHERS IN A SELECTED RURAL AREA AT TIRUNELVELI DISTRICT

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ABSTRACT:

Introduction: *Pregnancy is marked by a variety of physical changes, as well as by thoughts and feelings that sometimes overwhelm the mother-to-be. Though pregnancy is generally a time of joy and well-being, complications can occur that cloud the experience and put the patient and her unborn child at risk. When primi mothers gain information about the antenatal exercises and diet, they become more able to understand of how to deal with the pregnancy and it will be easy for them to take care themselves.*

Materials and methods: *A true experimental research design of pre and posttest with control group was adopted for the present study. Simple random sampling technique was used to allocate the groups as experimental and control group (N=100+100=200). Researcher developed the tool and midwife led educational intervention. Validity and reliability were found valid (cvr=1) and reliable (r=0.92). After the pretest midwife led educational intervention was administered to the experimental group whereas control group does not receive any intervention. After one month interval posttests were conducted using the same questionnaire as per schedule.*

Results: *Descriptive and inferential statistics were computed. In the experimental group knowledge, attitude and skill scores had consequently improved. The mean score of knowledge, attitude and skill in experimental group was statistically significant ($p<0.05$) whereas in control group knowledge scores was not found in significant.*

Conclusions: *Considering the results, midwife led educational intervention is effective in creating awareness of antenatal exercises and diet among primi mothers.*

Key Words: *Midwife led educational intervention, Effectiveness, antenatal exercises, antenatal diet, Primi mothers.*

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INTRODUCTION:

Pregnancy is time of joy and extreme happiness in a woman's life. It is marked by a variety of physical changes, as well as by thoughts and feelings that sometimes overwhelm the mother-to-be. Though pregnancy is generally a time of joy and well-being, complications can occur that cloud the experience and put the patient and her unborn child at risk.

Pregnancy a phase in a women's life plays a vital role bringing in subtle changes hindering their ability to carry out their daily routines, affecting their overall health-related quality of life reflecting on the physical and emotional stress. The goal of medical care during pregnancy aims at favorable outcome of the mother and the baby considering the health related functional pregnancy is a highly demanding period nutritionally. This period takes care of the mother and fetus both, where extra food required taking care of baby's weight followed by lactation, where once again extra nutrition is required for the production of milk. A healthy body tissue depends directly on essential nutrients in food. This is especially true during pregnancy because a whole new body is being formed. The diet of women before and during pregnancy has immense influence on the course of pregnancy and health of a child- both after its delivery and in the future. Lack of dietary knowledge, negative attitude and the knowledge about consequence of malnutrition among mother may result in lot of dietary indiscretion, which in turn can cause deficiency or exercise of energy and particular nutrition, as well as abnormal course of pregnancy. Hence, for keeping a proper diet and exercises during pregnancy a women must not only know the healthy eating guidelines, but also realize how a diet influence the course of pregnancy and child health.

OBJECTIVES OF THE STUDY

1. To determine the pre-test level of knowledge, attitude, of antenatal exercises and diet among primi mothers in a selected rural area
2. To determine the pre-test level of skill regarding antenatal exercises and diet among primi mothers in a selected rural area
3. To develop and implement Midwife Led Educational Intervention on antenatal exercises and diet counseling on the basis of knowledge, attitude, and skill
4. To evaluate the effectiveness of Midwife Led Educational Intervention on antenatal exercises and diet counseling in terms of gain in level of knowledge score, attitude score, and skill score
5. Find the association between demographic variables and pretest level of knowledge, attitude, and skill among primi mothers on antenatal exercises and diet counseling
6. Find the relationship between post test scores of primi mothers on antenatal exercises and diet counseling:

- Knowledge and attitude
- Knowledge and skill
- Attitude and skill

HYPOTHESES

H_1 – The mean post-tests knowledge score of primi mothers on antenatal exercises and diet counselling in the experimental group is significantly higher than that of the control group at measured by structured closed ended knowledge questionnaire on antenatal exercises and diet counselling

H_2 – The mean post-tests attitude score of primi mothers on antenatal exercises and diet counselling in the experimental group is significantly higher than that of the control group at measured by attitude scale on antenatal exercises and diet counselling

H_3 – The mean post-tests skill score of primi mothers on antenatal exercises and diet counselling in the experimental group is significantly higher than that of the control group at measured by observational check list on antenatal exercises and diet counselling

H_4 – There is a significant association between pre-test knowledge score of primi mothers on their age, religion, educational status, occupation, income, type of marriage, previous knowledge and sources of previous knowledge regarding antenatal exercises and diet counselling.

H_5 – There is a significant association between pre-test attitude score of primi mothers on their age, religion, educational status, occupation, income, type of marriage, previous knowledge and sources of previous knowledge regarding antenatal exercises and diet counselling.

H_6 - There is a significant association between pre-test skill score of primi mothers on their age, religion, educational status, occupation, income, type of marriage, previous knowledge and sources of previous knowledge regarding antenatal exercises and diet counselling.

H_7 – There is a significant correlation between the pre and post-tests scores of primi mothers on antenatal exercises and diet counselling when correlated with:

- Knowledge and attitude score
- Knowledge and skill score
- Attitude and skill score

METHODOLOGY:

True experimental research design with the study population comprised of experimental group (100) and control group (100). In cluster sampling technique simple random sampling technique was used to draw the samples from selected rural areas at Tirunelveli District. The tools used for the study were, part I - Demographic variables, Part II-Structured knowledge questionnaire regarding antenatal exercises and diet, Part III-Attitude scale and Part IV-Observational checklist. This study was approved by the research development committee members from Himalayan University, Itanagar, Arunachal Pradesh. Formal permission was obtained from the rural area president, Tirunelveli District. The knowledge, attitude and skill of primi mothers was assessed using pretest questionnaire. After the pre test was done, midwife led educational intervention was given to the primi mothers of experimental group consists of 100 primi mothers. After one month duration of gap the post test was carried out consequently for three times to the primi mothers with the same questionnaire and midwife led educational intervention.

DESCRIPTION OF DEMOGRAPHIC DATA:

The highest percentage of mothers were belongs to age group between 26-30 years in experimental (45%) and control (42%) group. Highest percentage of mothers were belongs to Hindu religion in experimental (62%) and control (53%) group. Figure depicts that the highest percentage of mothers were belongs to Hindu religion in experimental (62%) and control (53%) group. Highest percentage of mothers had no formal education in experimental (44%) and control (40%) group. Highest percentage of mothers were agriculture in experimental (48 %) and control (43%) group. Highest percentage of mothers had family income of Rs 5000-10000 in experimental (37%) and control (43%) group. Highest percentage of mothers were belongs to nuclear family in experimental (63 %) and control (60%) group. Highest percentage of mothers were belongs to rural area in experimental (62%) and urban area in control (53%) group. Highest percentage of mothers had information from family/ friends/ relatives in experimental (40%) and control (35%) group.

Table 1: comparison of overall distribution of mean, SD and mean percentage of experimental and control group pretest (K_1) and posttests (K_2, K_3, K_4) knowledge scores of primi mothers N=100+100=200

Knowledge		Experimental Group			Control Group			Difference in Mean %
		Mean	SD	Mean %	Mean	SD	Mean %	
Observation	K_1	6.73	1.94	17.7	7.01	1.89	18.4	0.8
	K_2	14.12	2.53	37.2	8.34	1.97	21.9	15.2
	K_3	20.82	3.28	54.8	9.14	2.13	24.1	30.7
	K_4	22.19	3.04	74.2	9.40	2.61	24.7	49.5

Table 1 depicts that in the experimental group, mean knowledge scores of post-test three (K_4) 22.19±3.04, post-test two (K_3) 20.82 ±3.28, post-test one (K_2) 14.12±2.53 were greater than the pre-test mean knowledge score (K_1) 6.73 ± 1.94. In the control group, mean knowledge score of post-test three (K_4) 9.40±2.61, post-test two (K_3) 9.14 ±2.13, post-test one (K_2) 8.34 ±1.97 slightly higher than the pre-test mean knowledge score K_1 7.01 ± 1.89. The overall difference in mean percentage between experimental and control group is 49.5%.

Table 2: comparison of overall distribution of mean, SD and mean percentage of experimental and control group pretest (A_1) and posttests (A_2, A_3, A_4) attitude scores of primi mothers N=100+100=200

Attitude		Experimental Group			Control Group			Difference in Mean %
		Mean	SD	Mean %	Mean	SD	Mean %	
Observation	A_1	28.18	11.59	40.84	28.11	11.94	40.74	0.10
	A_2	35.41	11.78	51.32	29.87	12.10	43.29	8.03
	A_3	45.54	13.34	66.00	31.41	12.09	45.52	10.33
	A_4	51.18	14.15	74.17	32.56	12.07	47.19	26.99

Table 2 depicts that in the experimental group, mean attitude scores of post-test three (A_4) 51.18±14.15, post-test two (A_3) 45.54 ±13.34, post-test one (A_2) 35.41±11.78 were greater than the pre-test mean knowledge score (A_1) 28.18 ± 11.59. In the control group, mean attitude score of post-test three (A_4) 32.56±12.07, post-test two (A_3) 31.41 ±12.09, post-test one (A_2) 29.87 ±12.10 slightly higher than the pre-test mean knowledge score A_1 28.11 ± 11.94. The overall difference in mean percentage between experimental and control group is 26.99 %.

Table 3: comparison of overall distribution of mean, SD and mean percentage of experimental and control group pretest (S_1) and posttests (S_2, S_3, S_4) skill scores of primi mothers. N=100+100=200

Skill		Experimental Group			Control Group			Difference in Mean %
		Mean	SD	Mean %	Mean	SD	Mean %	
Observation	S_1	8.18	1.59	23.37	8.11	1.94	26.03	0.20
	S_2	11.41	3.78	32.60	10.87	2.10	31.06	1.54
	S_3	17.54	4.34	50.11	12.85	2.54	36.71	13.41
	S_4	25.18	5.15	71.94	13.56	3.07	38.74	33.2

Table 3 depicts that in the experimental group, mean skill scores of post-test three (S_4) 25.18±5.15, post-test two (S_3) 17.54 ±4.34, post-test one (S_2) 11.41±3.78 were greater than the pre-test mean skill score (S_1) 8.18 ± 1.59. In the control group, mean skill score of post-test three (S_4) 13.56±3.07, post-test two (S_3) 12.85 ±2.54, post-test one (S_2) 10.87 ±2.10 slightly higher than the pre-test mean knowledge score S_1 8.11 ± 1.94. The overall difference in mean percentage between experimental and control group is 33.2 %.

Table 4: Association between level of knowledge in pre-test and selected demographic data in experimental group. N= (100+100) =200

Demographic Variables		Total	Above Mean (n=32)	Below Mean (n=68)	Chi-square Test
Age of the Mother	21-25	18	7	11	χ2= 1.492 P=0.683 Df= 3 Not Significant
	26-30	45	12	33	
	31-35	25	8	17	
	Above 35	12	5	7	
Religion	Hindu	62	18	44	χ2= 4.005 P=0.130 Df= 2 Not Significant
	Christian	28	8	20	
	Muslim	10	6	4	
Education	No formal education	44	11	33	χ2= 7.814 P=0.05 Df= 3 Significant
	Primary	25	8	17	
	Secondary	23	7	16	
	Graduate & Postgraduate	8	6	2	
Occupation	Government	3	2	1	χ2= 3.062 P=0.382 Df= 3 Not Significant
	Private	27	8	19	
	Agriculture	48	13	35	
	Housewife	22	9	13	
Family Income	< 5000	32	10	22	χ2= 4.431 P=0.101 Df= 2 Not Significant
	5001-10000	37	16	21	
	>10000	31	6	25	
Type of Family	Nuclear	63	20	43	χ2= 1.948 P=0.377 Df= 2 Not Significant
	Joint	27	7	20	
	Extended	10	5	5	
Place of living	Rural	62	28	34	χ2= 10.912 P=0.000 Df= 1 Significant
	Urban	38	5	33	
Source of information	Television/radio	30	6	24	χ2= 7.552 P=0.05 Df= 3 Significant
	Magazine/books	7	2	5	
	Hospital (nurses/doctors etc.)	23	5	18	
	Family/ friends/relatives	40	19	21	

The data presented in Table 4 portrays that the association between pre-test level of knowledge among mothers and the demographic variables. Pearson Chi-square test was used to calculate the association. There was significant association between pre-test level of knowledge and demographic variables such as Education (χ^2 =7.814, p=0.05), place of living (χ^2 = 10.192, p=0.000), place of living (χ^2 = 7.552, p=0.05). Hence null hypothesis (H_0) was rejected for Education, place of living and null hypothesis is accepted for other characteristics.

Table 5: Association between level of attitude in pre-test and selected demographic data in experimental group **N= (100+100) =200**

Demographic Variables		Total	Above Mean (n=35)	Below Mean (n=65)	Chi-square Test
Age of the Mother	21-25	18	6	12	χ2= 2.181 P=0.675 Df= 3 Not Significant
	26-30	45	16	29	
	31-35	25	9	16	
	Above 35	12	4	8	
Religion	Hindu	62	22	40	χ2= 1.345 P=0.451 Df= 2 Not Significant
	Christian	28	10	18	
	Muslim	10	4	7	
Education	No formal education	44	15	29	χ2= 1.572 P=0.586 Df= 3 Not Significant
	Primary	25	9	16	
	Secondary	23	8	15	
	Graduate & Postgraduate	8	3	5	
Occupation	Government	3	1	2	χ2= 12.414 P=0.0398 Df= 3 Significant
	Private	27	9	18	
	Agriculture	48	17	31	
	Housewife	22	8	14	
Family Income	< 5000	32	11	21	χ2= 9.98 P=0.008 Df= 2 Significant
	5001-10000	37	13	24	
	>10000	31	11	20	
Type of Family	Nuclear	63	22	41	χ2= 1.369 P=0.781 Df= 2 Not Significant
	Joint	27	9	18	
	Extended	10	4	7	
Place of living	Rural	62	22	40	χ2= 2.161 P=0.089 Df= 1 Not Significant
	Urban	38	13	25	
Source of information	Television/radio	30	11	20	χ2= 1.534 P=0.672 Df= 3 Not Significant
	Magazine/books	7	2	5	
	Hospital (nurses/doctors etc.)	23	8	15	
	Family/ friends/relatives	40	14	26	

The data presented in Table 5 portrays that the association between pre-test level of attitude among mothers and the demographic variables. Pearson Chi-square test was used to calculate the association. There was significant association between pre-test level of attitude and demographic variables such as occupation (χ^2 =12.414, p=0.0398), family income (χ^2 = 9.98, p=0.008). Hence null hypothesis (H_0) was rejected for occupation, family income and null hypothesis is accepted for other characteristics

Table 6: Association between level of skill in pre-test and selected demographic data in experimental group n= (100+100) =200

Demographic Variables		Total	Above Mean (n=24)	Below Mean (n=76)	Chi-square Test
Age of the Mother	21-25	18	4	14	χ2= 6.517 P=0.048 Df= 3 Significant
	26-30	45	11	34	
	31-35	25	6	19	
	Above 35	12	3	9	
Religion	Hindu	62	15	47	χ2= 0.835 P=0.360 Df= 2 Not Significant
	Christian	28	7	21	
	Muslim	10	2	8	
Education	No formal education	44	11	33	χ2= 1.22 P=0.269 Df= 3 Not Significant
	Primary	25	6	19	
	Secondary	23	6	17	
	Graduate & Postgraduate	8	2	6	
Occupation	Government	3	1	2	χ2= 0.600 P=0.438 Df= 3 Not Significant
	Private	27	6	21	
	Agriculture	48	12	36	
	Housewife	22	5	17	
Family Income	< 5000	32	8	24	χ2= 3.518 P=0.310 Df= 2 Not Significant
	5001-10000	37	9	28	
	>10000	31	7	24	
Type of Family	Nuclear	63	15	48	χ2= 6.149 P=0.003 Df= 2 Significant
	Joint	27	6	21	
	Extended	10	2	8	
Place of living	Rural	62	15	47	χ2= 3.518 P=0.310 Df= 1 Not Significant
	Urban	38	9	29	
Source of information	Television/radio	30	7	23	χ2= 2.488 P=0.341 Df= 3 Not Significant
	Magazine/books	7	2	5	
	Hospital (nurses/doctors etc.)	23	6	17	
	Family/ friends/relatives	40	10	30	

The data presented in Table 6 portrays that the association between pre-test level of Skill among mothers and the demographic variables. Pearson Chi-square test was used to calculate the association. There was significant association between pre-test level of skill and demographic variables such as age (χ^2 =6.517, p=0.048), type of family (χ^2 = 6.149, p=0.003). Hence null hypothesis (H_0) was rejected for age, type of family and null hypothesis is accepted for other characteristics

IMPLICATIONS

The findings of the study provided the useful information to the health care providers, health educators and teachers to improve their knowledge.

NURSING EDUCATION

The nursing faculties should be encouraged to take up novel improvisations to make interesting health education activities for health promotion. The curriculum should provide an opportunity for innovation and experience to conduct health education, thereby spreading awareness messages to wider areas of the society. The present study on primi mothers can be utilized by midwives to understand the different aspects of antenatal exercises and diet counseling and they can duplicate the study by giving education to fathers or to

other family members, to motivate the antenatal mothers. The importance of antenatal exercise and diet is an important aspect that has to be understood by everyone.

NURSING SERVICE

Nurses are the key providers of preventive, promotive, curative and rehabilitative services to individuals and communities. The expanded role of nurse emphasizes on activities that promote health. Nurses as an educator and client advocate, are in a better position to mound the health-related behavior among primi mothers. Primi mothers can be involved actively to modify the health-related behavior. Therefore, midwife led educational intervention is feasible cost-effective method of health education that can be extensively used in health care.

NURSING RESEARCH

Nurses are one of the important health care team members obliged to provide cost effective evidence-based care to their clients. Implications of present study for research include replicating the study in other geographic areas, using a larger sample, different cultures, educational and occupational background and income category to see if the study results are consistent with what has been derived in this study. The study can be conducted among other family members as fathers to identify their knowledge regarding antenatal exercises and diet counseling. Studies also can be conducted by using focus groups like multi gravida mothers.

NURSING ADMINISTRATION

It is essential for nursing administrators to facilitate activities to improve knowledge and practice of the public towards significant health problems. The present study provides suggestions to nurse administrators to focus their attention in organizing educational intervention programmes catering the needs of antenatal mothers. They should plan and organize cost effective programmes for staff nurses and teaching faculties and encourage them to serve antenatal mothers.

RECOMMENDATIONS:

- A similar study can be conducted in large scale.
- Comparative study can be done to assess the effectiveness of midwife led educational intervention and video Teaching Program on knowledge, attitude and skill regarding Antenatal exercise and diet among primi mothers.

CONCLUSION

Midwife Led Educational intervention significantly increases the knowledge, change in attitude and skill on antenatal exercise and diet among primi mothers. So in future nurses can prepare an effective midwife led educational intervention to reduce the maternal mortality rate.

REFERENCES:

1. Benetton Ruth, Brown. Myels textbook for midwives. 11th ed. Hong Kong: Churchill living stone; 1989. P-13, 880-82.
2. Oakley A.Hick D, Rajan L, Rigby A. Social support in Pregnancy. Does it have long term effects? Journal of Reproductive and infant Psychology. 1986; 14: 7-22.
3. Malhotra AD. Recent advances in Obstetrics and Gynecology. New Delhi: JP Brothers Medical Publishers Pvt Ltd; (1). 1994
4. Michelle. Health and fitness in pregnancy, [serial online] 2004 March: available http/www. Pregnancy weekly.com/ pregnancy_health_fitness/lower_stretches.htm.
5. Dorena. Pregnancy health, [serial online] 2006 Jan: available from http/www. healthology.com/main/article.
6. Paisley T.S, Joy EA. Exercise during Pregnancy; A practical approach. Journal of current sports Med Rep. 2003; 216.
7. Barbara. Exercise and fitness, [serial online] 2006 Feb: available from http//www.wyethnutritionals.com/moms/mom_exercise.htm.
8. Bouchez Colette. Your perfectly pampered pregnancy. 1st ed. USA: Broadway books, a division of random house, Inc; 2004; 130-45.
9. Edelman CL and Mandle CL. Health promotion throughout life span. 2nd ed. St.
10. Louis, Missouri: CV Mosby; 1990.
11. Dickson, Silverman and Schult. Maternal and Infant nursing care. 2nd ed. St. Louis,Missouri: Mosby publications; 1994. Pg-191.
12. Dutta DC. Text book for obstetrics. 4th ed. New Delhi: Central book agency; 1998. P-105.